Indiana Department of Environmental Management
Office of Air Management
Rule Fact Sheet
September 1, 1999

Development of Amendments to Rules Concerning the Definition of Nonphotochemically Reactive Hydrocarbons or Negligibly Photochemically Reactive Compounds #99-93(APCB)

Overview

This rulemaking amends the definition of nonphotochemically reactive hydrocarbons or negligibly photochemically reactive compounds by deleting an out-of-date list of nonphotochemically reactive hydrocarbons and in its place incorporating by reference 40 CFR 51.100(s)(1), 62 FR 44900, and 63 FR 17331. The compounds listed in 40 CFR 51.100(s)(1) have been determined by the United States Environmental Protection Agency (U.S. EPA) to be nonphotochemically or negligibly photochemically reactive hydrocarbons.

Citations Affected

Amends: 326 IAC 1-2-48

Affected Persons and Industries

The types of sources affected are: dry cleaning facilities using perchloroethylene, industries that manufacture and use paints, inks, adhesives, solvents, refrigerants, aerosol propellants, fire extinguishants, and blowing agents.

The general public will benefit from this rule as it improves the state's ability to provide public health protection from the effects of ground level ozone by more accurately focusing its resources on compounds that are actual ozone precursors rather than on compounds that have negligible photochemical reactivity.

Potential Cost

U.S. EPA has determined that the federal rule change will not have a significant adverse effect on a sector of the economy, productivity, competition, jobs, the environment, public health and safety of state, local, or tribal governments or communities. The rule that the department is proposing is consistent with the federal rule.

Description

Ozone is formed when photochemically reactive volatile organic compounds (VOCs) in the atmosphere are exposed to sunlight and high temperatures. VOCs are emitted from automobiles, lawn equipment, manufacturing operations, printing companies, and a wide variety of other sources. Typically, ozone levels become elevated in larger metropolitan areas during the hottest days of summer. Although ozone cannot be seen or tasted, it can irritate the lungs and make breathing difficult. Children and people with respiratory problems are particularly susceptible to pulmonary distress brought on by elevated ozone levels.

U.S. EPA will remove a compound from its definition of a volatile organic compound if it is determined that its photochemical reactivity is less than ethane. If a compound is determined to have only a negligible photochemical reactivity and therefore listed as a VOC-exempt

compound, U.S. EPA will no longer enforce or give SIP credit for emissions reductions.

The purpose of this rulemaking action is to be, and hereafter remain, consistent with amendments to federal rules by incorporating by reference 40 CFR 51.100(s)(1). U.S. EPA has added several organic compounds to its list of negligibly photochemically reactive compounds at 40 CFR 51.100(s)(1) that are not reflected in the current state rule (326 IAC 1-2-48). They include the following:

1. **February 7, 1996 (61 FR 4588)**
   perchloroethylene (tetrachloroethylene).

This revision to 40 CFR 51.100(s)(1) added perchloroethylene to the list of compounds excluded from the definition of VOC on the basis that it has negligible photochemical reactivity and therefore negligible contribution to ground level ozone formation. Perchloroethylene, also known as tetrachloroethylene, is not required to be controlled in order to prevent the formation of ground level ozone. Perchloroethylene is a solvent commonly used in dry cleaning and degreasing operations. Perchloroethylene will continue to be regulated as a hazardous air pollutant under Section 112 of the Clean Air Act. U.S. EPA has issued regulations limiting emissions of perchloroethylene from dry cleaning, halogenated solvent cleaning, and as a feedstock in the organic chemical manufacturing industry.

2. **October 8, 1996 (61 FR 52848)**
   3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca);
   1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb);
   1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee).

This revision to 40 CFR 51.100(s)(1) added HCFC-225ca and cb and HFC 43-10mee to the list of compounds excluded from the definition of VOC on the basis that these compounds have negligible photochemical reactivity and therefore negligible contribution to ground level ozone formation. These compounds are solvents which could be used in electronics and precision cleaning.

3. **August 25, 1997 (62 FR 44900)**
   difluoromethane (HFC-32);
   ethylfluoride (HFC-161);
   1,1,1,3,3,3-hexafluoropropane (HFC-236fa);
   1,1,2,2,3-pentafluoropropane (HFC-245ca);
   1,1,2,3,3-pentafluoropropane (HFC-245ea);
   1,1,1,2,3-pentafluoropropane (HFC-245eb);
   1,1,1,3,3-pentafluoropropane (HFC-245fa);
   1,1,1,2,3,3-hexafluoropropane (HFC-236ea);
   1,1,1,3,3-pentafluorobutane (HFC-365mfc);
   chlorofluoromethane (HCFC-31);
   1-chloro-1-fluoroethane (HCFC-151a);
   1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a);
   1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane ($C_4F_9OCH_3$);
   2-(difluoromehtoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ($(CF_3)_2CFCF_2OCH_3$);
   1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane ($C_4F_9OC_2H_5$);
   2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ($(CF_3)_2CFCF_2OC_2H_5$).

This revision to 40 CFR 51.100 (s)(1) added 16 compounds to the list of compounds excluded from the definition of VOC on the basis that they have negligible photochemical reactivity and therefore negligible contribution to ground level ozone formation. These compounds are commonly used as refrigerants, aerosol propellants, fire extinguishants, blowing agents, and solvents.

4. **April 9, 1998 (63 FR 17331)**
Methyl acetate

This revision to 40 CFR 51.100(s) added methyl acetate to the list of compounds excluded from the definition of VOC on the basis that this compound has negligible photochemical reactivity and therefore negligible contribution to the formation of ground level ozone. Methyl acetate is commonly used as a solvent in paints, inks, and adhesives.

While IDEM recognizes that delisting these compounds may make their use more attractive to some industries, IDEM will work with industries to help them carefully consider other nonpolluting alternatives, if available.

IDEM believes that it is appropriate for Indiana's list of regulated VOCs to be consistent with U.S. EPA's. This proposed amendment, therefore, changes the format of this rule from a list of exempt compounds to a reference to the CFR, which the department updates annually. Since the list of compounds determined to have negligible photochemical reactivity are revised periodically by U.S. EPA, changing the format of the current rule to reference the CFR is a more efficient use of rulemaking resources since it reduces the number of rulemakings, while ensuring that state and federal requirements are consistent in as timely a way as possible.

Consideration of Factors Outlined in Indiana Code 13-14-8-4

Indiana Code 13-14-8-4 requires that in adopting rules and establishing standards, the board shall take into account the following:

1) All existing physical conditions and the character of the area affected.
2) Past, present, and probable future uses of the area, including the character of the uses of surrounding areas.
3) Zoning classifications.
4) The nature of the existing air quality or existing water quality, as appropriate.
5) Technical feasibility, including the quality conditions that could be reasonably be achieved through coordinated control of all factors affecting the quality.
6) Economic reasonableness of measuring or reducing any particular type of pollution.
7) The right of all persons to an environment sufficiently uncontaminated as not to be injurious to:
(A) human, plant animal, or aquatic life; or
(B) the reasonable enjoyment of life and property.

Consistency with Federal Requirements

The amended rules are consistent with federal rules.

IDEM Contact

Technical information regarding this rulemaking action can be obtained from Pat Daniel, Program Planning and Policy Section, Office of Air Management, (317) 233-0429 or (800) 451-6027, press 0, and ask for 3-0429 (in Indiana). Additional information regarding this action may be obtained from Kiran Verma, Rule Development Section, Office of Air Management, (317) 233-5678 or (800) 451-6027, extension 3-5678 (in Indiana).